WIDE SWING, LOW POWER CURRENT MIRROR WITH HIGH OUTPUT IMPEDANCE

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ABSTRACT

A current mirror includes a serially connected diode-connected transistor of a first conductivity type, a saturated (fully-on) transistor of a second conductivity type, and a current source for providing a reference current. A gate voltage generated by the diode-connected transistor in response to the reference current is provided to the gate of a matching transistor. This causes the matching transistor to mirror the reference current. Meanwhile, an output transistor cascoded with the matching transistor is gate-coupled to the junction between the saturated transistor and the current source. This allows the output transistor to provide an output voltage swing from one supply voltage to two saturation voltage drops from the second supply voltage. Meanwhile, the cascode configuration gives the current mirror a high output impedance.